

**REMARKS**

Reconsideration and withdrawal of the rejections set forth in the Office Action are respectfully requested in view of this amendment and the following reasons. By this amendment, claims 1-10, 18-35, 42, 43, 45, 46, 48, and 52-55 have been amended, and claim 47 has been canceled. Claims 1-46 and 48-55 are pending in this application, of which claims 11-17, 36-41, 44, and 49-51 were previously withdrawn from further consideration. The cancellation of claim 47 is made without prejudice or disclaimer to the subject matter contained therein.

Claims 1 and 55 have been amended to incorporate the features of canceled claim 47 and correct informalities. Support for these amended features may be found at least on page 3, lines 13-15; page 7, line 29 – page 8, line 1; and claim 47 of the present application as originally filed.

Claims 2-10, 18-35, 42, 43, 45, 46, 48, and 52-54 have been amended to correct informalities and/or to improve wording.

It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132. For at least these reasons, entry of the present Amendment is therefore respectfully requested. Accordingly, Applicants request reconsideration and timely withdrawal of the pending rejections for the reasons discussed below.

**Rejections Under 35 U.S.C. §102**

Claims 1-9, 24-30, 32-35, 42, 43, 47, 48, 52, 53, and 55 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,919,332 issued to Bailey (“Bailey”).

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)).

Claim 1, as amended, recites, *inter alia*:

the housing being formed with a *radial support* to facilitate **only axial displacement** of the stem member (emphasis added).

In connection with this claim feature, an embodiment of the presently claimed subject matter describes that “[w]ith particular reference to Figs. 1B and 1C, the housing 22 is formed with an annular support neck portion 57 for slidingly supporting the stem member 44, allowing it to displace only in an axial direction without any tilt or rotation. Rather than the annular portion 57, there may be formed several ribs or segments (not shown) supporting the stem member” (see specification, page 7, line 29 – page 8, line 3). Here, the annular support neck portion 57 is an example of the radial support that facilitates displacement of the stem member 44 only in an axial direction. Besides being in a neck

form as shown in Figs. 1B and 1C, the radial support can be several “ribs” or “segments” (page 8, line 2), or “radial fins” (page 16, line 10).

Applicants submit that Bailey fails to teach this feature recited in claim 1. An inwardly extending lip 21 would be a corresponding element of Bailey to the “radial support” recited in claim 1 because in order for any reference element to teach the “radial support” it must be formed in the housing 2 and the lip 21 is the only element formed in the housing 2 that is in contact with the diaphragm 16. Bailey describes that the lip 21 “engages the upper end of said spring 19” (Col. 4, lines 43-44). As can be understood from this description and Fig. 1, the inwardly extending lip 21 engages a spring 19 and this spring 19 in turn engages a riser 8, which the Examiner believes corresponds to the “stem member” of claim 1. However, it is clear that the extending lip 21 itself does not guide the riser 8 to be displaced only in an axial direction because it does not even *directly* contact the riser 8. Moreover, the extending lip 21 could not be considered as restricting the riser 8 to only axial displacement via an *indirect* connection through the spring 19 because by its nature the spring 19 is flexible, and therefore, in a transition position between the open and closed positions disclosed in Figs. 1 and 2 (i.e., where a half of the riser 8 protrudes from the housing 2), the riser 8 would be prone to tilt and be displaced *also* in a lateral direction due to the riser 8 being solely held by the flexible elastic spring 19 and the flexible diaphragm 16. In the transition position, both flexible elements 19 and 16 are not tensed. It should also be appreciated that since the fluid inlets 4 and 5 are not even adapted to direct fluid in a direction parallel to a desired axial direction of the riser 8 (the fluid inlets 4 and 5 are not

coaxial with the riser 8), such a lateral displacement of the riser 8 is inevitable.

Accordingly, it is clear that Bailey fails to teach or suggest that "the housing being formed with a radial support to facilitate only axial displacement of the stem member," as recited in claim 1.

Claim 1 is not anticipated by Bailey. In addition to this, Applicants respectfully submit that claim 1 is allowable over Bailey even in view of obviousness. For the sake of expediting examination of the present application, it is noted that it is not be obvious for one of ordinary skill in the art to modify Bailey's sprinkler 1 to include a housing being "formed with a radial support to facilitate only axial displacement of the stem member," for at least the following reasons:

- Bailey discloses a specific sprinkler housing having an extremely wide top opening (see, for example, Figs. 1 and 2, the opening defined by the lip 21);
- Bailey emphasizes that the sprinkler 1 is "extremely easy to assemble" (Col. 4, line 50; and Col. 5, line 44);
- Bailey's extremely wide top opening of the housing is deliberately designed to allow easy insertion of the large spring 19 therein (i.e. easy assembly) as shown in Fig. 3 and described, e.g., in Col. 3, lines 28-32 and Col. 5, lines 30-39.

Accordingly, one of ordinary skill in the art would not modify the housing 2 of Bailey to provide radial support for the stem member thereof because the opening of the housing 2 is intentionally designed to be larger than the radius of the riser 8, thereby allowing insertion and accommodation of the spring 19 (which is adapted to surround the riser 8 and

thus has a greater radius compared thereto) in the housing. Furthermore, even if one adds a radial support to a lower part of the housing 2, this would not lead to the above-cited feature of claim 1 because near the open position shown in Fig. 2, the riser 8 is only adjacent to an upper portion of the housing 2. Thus, Applicants respectfully submit that claim 1 is not anticipated by and not obvious over the teachings of Bailey.

Claim 55 recites similar features as claim 1, and thus is allowable for at least this reason.

Claims 2-9, 24-30, 32-35, 42, 43, 48, 52, and 53 depend directly or indirectly upon claim 1, and thus are allowable for at least this reason.

Claim 47 has been canceled without prejudice or disclaimer and its features have been incorporated into claim 1, thereby rendering the rejection thereto moot.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §102(b) rejection of claims 1-9, 24-30, 32-35, 42, 43, 48, 52, 53, and 55. Since none of the other prior art of record discloses or suggests all the features of the claimed subject matter, Applicants respectfully submit that independent claims 1 and 55, and all the claims that depend therefrom, are allowable.

### ***Rejections Under 35 U.S.C. §103***

1. Claims 18-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bailey in view of U.S. Patent No. 6,186,413 issued to Lawson, *et al.* ("Lawson").

Claims 18-22 depend directly or indirectly from claim 1. Lawson fails to cure the

deficiencies of Bailey noted above with regard to claim 1. Lawson is cited by the Examiner in an attempt to teach the additional features of claims 18-22 and does not teach that "the housing being formed with a radial support to facilitate only axial displacement of the stem member," as recited in claim 1. Thus, even if one of ordinary skill in the art happens to combine the teachings of Bailey and Lawson, the combined references still do not teach each and every feature recited in claim 1. Accordingly, claims 18-22 are allowable over Bailey and Lawson, whether taken alone or in combination, at least because they depend from allowable claim 1.

2. Claims 10, 23, and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bailey in view of U.S. Patent No. 6,000,634 issued to Mehoudar, *et al.* ("Mehoudar").

Claims 10, 23, and 31 depend directly or indirectly from claim 1. Mehoudar fails to cure the deficiencies of Bailey noted above with regard to claim 1. Mehoudar is cited by the Examiner in an attempt to teach the additional features of claims 10, 23, and 31 and does not teach that "the housing being formed with a radial support to facilitate only axial displacement of the stem member," as recited in claim 1. Thus, even if one of ordinary skill in the art happens to combine the teachings of Bailey and Mehoudar, the combined references still do not teach each and every feature recited in claim 1. Accordingly, claims 10, 23, and 31 are allowable over Bailey and Mehoudar, whether taken alone or in combination, at least because they depend from allowable claim 1.

3. Claim 45 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bailey in view of U.S. Patent Application Publication No. 2002/0153432 applied for by McKenzie, *et al.* ("McKenzie").

Claim 45 depends from claim 1. McKenzie fails to cure the deficiencies of Bailey noted above with regard to claim 1. McKenzie is cited by the Examiner in an attempt to teach the additional features of claim 45 and does not teach that "the housing being formed with a radial support to facilitate only axial displacement of the stem member," as recited in claim 1. Thus, even if one of ordinary skill in the art happens to combine the teachings of Bailey and McKenzie, the combined references still do not teach each and every feature recited in claim 1. Accordingly, claim 45 is allowable over Bailey and McKenzie, whether taken alone or in combination, at least because it depends from allowable claim 1.

4. Claim 54 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bailey in view of U.S. Patent No. 6,340,059 issued to Bethea, *et al.* ("Bethea").

Claim 54 depends indirectly from claim 1. Bethea fails to cure the deficiencies of Bailey noted above with regard to claim 1. Bethea is cited by the Examiner in an attempt to teach the additional features of claim 54 and does not teach that "the housing being formed with a radial support to facilitate only axial displacement of the stem member," as recited in claim 1. Thus, even if one of ordinary skill in the art happens to combine the

teachings of Bailey and Bethea, the combined references still do not teach each and every feature recited in claim 1. Accordingly, claim 45 is allowable over Bailey and Bethea, whether taken alone or in combination, at least because it depends from allowable claim 1.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §103(a) rejection of claims 10, 18-23, 31, 45, and 54. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed subject matter, Applicants respectfully submit that independent claims 1 and 55, and all the claims that depend therefrom, are allowable.

**CONCLUSION**

Applicants believe that a full and complete response has been made to the pending Office Action and respectfully submit that all of the stated grounds for rejection have been overcome or rendered moot. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative at the number below to expedite prosecution.

If an extension of time is necessary to prevent abandonment of this application and is not filed herewith, then such extension of time is hereby petitioned for under 37 C.F.R. §1.136(a). Any fees required for further extensions of time and any fees for the net addition of claims are hereby authorized to be charged to our Deposit Account No. 14-0112. Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,  
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